

# Supporting Patient Care Beyond the Clinical Encounter: Three Informatics Innovations from Partners Health Care

Eric G Poon, MD<sup>1,2</sup>, Jonathan Wald, MD MPH<sup>2</sup>, David W Bates, MD MSc<sup>1,2</sup>,  
Blackford Middleton<sup>1,2</sup>, MD MPH MSc, Gilad J Kuperman, MD PhD<sup>1,2</sup>,  
Tejal K Gandhi, MD MPH<sup>1</sup>

<sup>1</sup>Division of General Medicine, Brigham and Women's Hospital

<sup>2</sup>Clinical Informatics Research and Development, Partners Information Systems, Boston, MA

**Background:** As the focus of medicine moves from acute episodic care in the hospital to chronic disease management in outpatients, the primary care physician will play an increasingly important role in the coordination of patient care activities. Traditional outpatient informatics systems have largely focused on the workflow during the clinical encounter. Many tasks, including management of test results, coordination of subspecialty referrals and communication between patients and the practice, remain unsupported. When these tasks are not performed well, quality of care, patient safety and satisfaction may suffer. To address these issues, Partners Healthcare in Boston, MA has recently developed several applications to address these issues. This demonstration will showcase 3 of these new applications: i) Results Manager, ii) Referrals Manager and iii) Patient Gateway. All interoperate with a browser-based electronic medical record already used by over 500 primary care physicians at Partners Healthcare.

**Results Manager:** Test Results management is an important activity for outpatient clinicians, but research indicates that abnormal test results often are not acted on in an appropriate and timely manner. *Results Manager* is a browser-based, provider-centric, comprehensive application designed to help clinic physicians review and act upon test results in a timely, safe, reliable and efficient manner. The application incorporates extensive decision support features to classify the degree of abnormality for each result, presents guidelines to help clinicians manage abnormal results, allows clinicians to generate result letters to patient with predefined, context-sensitive templates and prompts physicians to set reminders for future testing.

**Referrals Manager:** The referral process is a critical link between primary care and subspecialty care in the outpatient setting. Prior studies have demonstrated that communication breakdown often occurs in this process, leading to pervasive dissatisfaction among providers and potentially sub-

optimal care for patients. The *Referrals Manager* has been developed to improve communication among staff members within the referring clinic and between the primary care physicians (PCPs) and subspecialty physicians (SSPs). This application allows PCPs and their administrative staff to initiate and authorize referrals on-line. It enables PCPs to send pertinent clinical information and the relevant clinical questions to the SSPs. It also allows PCPs to check if the requested SSP appointment has been scheduled and to review the SSP visit note once it is completed.

**Patient Gateway:** The widespread adoption of the internet has provided new opportunities for patients to take a proactive role in their healthcare. Partners Healthcare has developed the *Patient Gateway*, a secure patient-portal that facilitates communication between patients and their practices over the internet. Through the *Patient Gateway*, patients can request prescription refills, appointments and insurance authorization on-line. They can also send secure messages to the practice and access clinician-approved health information written in everyday language. We are also developing new features to help patients reconcile their medication lists, report medication side effects, manage their diabetes, report significant family history and adhere to national guidelines on health maintenance.

**Conclusion:** Information technology has significant potential to enhance the quality of healthcare by making existing care processes more robust and efficient. The three applications presented in this demonstration offer examples of how informatics innovations can improve communication and workflow between care episodes for both providers and patients. They also demonstrate opportunities for improving patient and provider satisfaction, facilitating the coordination of patient care and preventing errors that may put patients at risk.